

UNITED STATES DISTRICT COURT  
EASTERN DISTRICT OF MICHIGAN  
SOUTHERN DIVISION

UNITED STATES OF AMERICA,

CASE NO. 2:10-cr-20005

Plaintiff,

HONORABLE NANCY G. EDMUNDS

-VS-

D-1 UMAR FAROUK ABDULMUTALLAB,

Defendant.

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**GOVERNMENT'S MOTION *IN LIMINE* TO ADMIT DEMONSTRATIVE EVIDENCE  
REGARDING DEFENDANT'S EXPLOSIVE DEVICE**

The United States respectfully moves to admit at trial demonstrative evidence that relates to the explosive device that the defendant detonated onboard Northwest Flight 253 on December 25, 2009. The demonstrative evidence at issue is highly probative of certain offense elements that the government must prove at trial, and therefore should be admitted.

**BACKGROUND**

On December 25, 2009, the defendant boarded Northwest Airlines Flight 253 in Amsterdam, Netherlands, bound for Detroit, Michigan. Hidden in the defendant's underwear was a bomb consisting of Triacetone Triperoxide (also known as "TATP") and Pentaerythritol Tetranitrate (also known as "PETN"), both of which are high explosives. As the aircraft began its descent over the United States, the defendant detonated the bomb. Nearby passengers, some of whom will testify at trial, heard a loud noise and then saw smoke and fire come from the defendant's lap. As the fire burned in the defendant's lap and seating area, passengers and flight attendants reacted by putting out the fire with extinguishers and subduing the defendant.

On December 15, 2010, the defendant was charged in a superseding indictment with one count of conspiracy to commit an act of terrorism transcending national boundaries, in violation of 18 U.S.C. § 2332b(a)(1) and (2), one count of attempted murder, in violation of 18 U.S.C. § 1113, one count of willfully placing a destructive device in proximity to a civil aircraft, in violation of 18 U.S.C. § 32(a)(2), one count of attempted use of a weapon of mass destruction, in violation of 18 U.S.C. § 2332a(a)(2), one count of willfully attempting to destroy and wreck a civil aircraft, in violation of 18 U.S.C. § 32(a)(1) and (8), and three counts of possessing or using a destructive device in furtherance of or during a crime of violence, in violation of 18 U.S.C. § 924(c).

On January 26, 2011, a news media report stated:

Detroit lawyer Anthony Chambers, told reporters Tuesday he will argue that the materials found in Abdulmutallab's underwear could not have destroyed Northwest Flight 253. 'It's a very defensible case,' Chambers said. 'To have an explosion, you have to have an explosive.' He said the device that ignited, burning the alleged terrorist, "could not have done the damage" that prosecutors have alleged.<sup>1</sup>

The defendant's standby counsel has made similar statements to this Court. Docket No. 31, Motion for Discovery/Release of Prior Counsel's File Including Expert Reports," at ¶ 5 ("[t]hat counsel herein further believes . . . that the alleged attempt to 'destroy an aircraft' was impossible!").

At trial, the government intends to call an explosives expert who will explain to the jury the components of the defendant's bomb, why the bomb did not fully function as intended, and how the bomb would have exploded if it had fully functioned properly. In conjunction with this

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<sup>1</sup> Detroit News, "Legal advisor: Suspect to challenge bomb's danger," January 26, 2011.

testimony the government intends to introduce a model of the defendant's bomb that was constructed by the expert. The model replicates the components of the bomb based on actual components that were recovered by law enforcement officers from the aircraft. The bomb consisted primarily of a syringe assembly (which was used to initiate the detonation of the booster charge), the TATP (which acted as the booster charge to detonate the main charge), and the PETN (which acted as the main charge).

The government also intends to introduce video recordings of three demonstrations conducted by the expert.<sup>2</sup> The first demonstration shows the combination of two chemicals, potassium permanganate (a crystalized oxidizer) and ethylene glycol (a liquid fuel), in a syringe in a laboratory. The video recording of this demonstration is approximately two minutes and 45 seconds in length. The demonstration shows that combining these two chemicals produces smoke and fire. Chemical analysis of the syringe assembly recovered from Flight 253 revealed the presence of residues of ethylene glycol, as well as solid particles of potassium, manganese and oxygen -- all of which are the elements present in potassium permanganate.

The second and third demonstrations show the detonation of 76 grams and 200 grams of PETN. The video recordings of these demonstrations show the detonations at full speed, 15 percent speed, and slow motion.<sup>3</sup> The government intends to use at trial approximately one-and-a-half minutes of video recordings for each demonstration. In both demonstrations, the PETN was placed on a sheet of aluminum metal that was sitting on two saw horses. These

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<sup>2</sup> The government is prepared to play these video recordings at a hearing on this motion, or provide them directly to the Court on a CD ROM disc.

<sup>3</sup> The portion of the video recording in slow motion shows the initial portion of the detonation and is only 21 seconds in length.

demonstrations were conducted in a grass field. The two quantities of PETN used in the demonstrations represent the amount of PETN recovered from the aircraft (76 grams) and the amount of PETN that the expert believes was contained in the bomb prior to detonation (200 grams).

### ANALYSIS

Demonstrative evidence is admissible if it is relevant. *United States v. Humphrey*, 279 F.3d 372, 376 (6th Cir. 2002) (affirming admission of 107 coin bags as demonstrative evidence in prosecution for embezzling cash and coins from a bank vault because evidence was used “to show the jury what 107 coin bags would look like”); *United States v. Cork*, 69 Fed.Appx. 733, 739 (6th Cir. 2003) (affirming use of mannequin as demonstrative exhibit “as an aid in visualizing the appearance of the person described as robbing the banks”). “The standard for relevancy is ‘extremely liberal.’” *United States v. Whittington*, 455 F.3d 736, 738 (6th Cir. 2006). Evidence is relevant if it has “*any* tendency to make the existence of any fact that is of consequence to the determination of the action more probable or less probable than it would be without the evidence.” *Id.* (emphasis in original).

The defendant is charged with various offenses related to his attempted bombing of Flight 253. These offenses require the government to prove numerous elements, including: that the defendant possessed a destructive device (Count Two, 18 U.S.C. § 924(c), and Count Six, 18 U.S.C. § 924(c)); that the defendant used and attempted to use a destructive device (Count Four, 18 U.S.C. § 924(c), and Count Seven, 18 U.S.C. § 2332a(a)(2)); that the defendant placed a destructive device onboard Flight 253 and in doing so likely endangered the safety of the aircraft (Count Five, 18 U.S.C. § 32(a)(2)); that the defendant attempted to murder other individuals

(Count Three, 18 U.S.C. § 1113); and that the defendant attempted to destroy or wreck the aircraft (Count Eight, 18 U.S.C. § 32(a)(8)). The law defines “destructive device” to mean “any explosive . . . bomb.” 18 U.S.C. § 921(a)(4)(A).

The demonstrative evidence discussed above is directly relevant to all of these elements. The model has a tendency to make it more probable that the device the defendant carried in his underwear was in fact a destructive device. The model shows how the different components were assembled to create the explosive device, including the parts of the device that contained the high explosives TATP and PETN. The model also explains to a jury of lay persons how the device was intended to function.

The video recording of the potassium permanganate and ethylene glycol has a tendency to make it more probable that the defendant used the device by mixing the potassium permanganate and ethylene glycol in the syringe thereby causing smoke and fire. This video will also corroborate the testimony of passengers on Flight 253 who witnessed smoke and then fire erupt from the defendant’s lap.

The video recordings of the PETN have a tendency to make it more probable that the defendant’s bomb endangered the safety of the aircraft, that the bomb was intended to kill other individuals, or was intended to wreck or destroy the aircraft. A jury of lay persons are unlikely to know what PETN is, let alone the destructive force of 76 or 200 grams of PETN. The demonstrations the government seeks to introduce provide the jury with an idea of the destructive power of PETN in a manner that is easily understood by a lay person. The detonation of the PETN is on aluminum sheet metal -- an inanimate object commonly known and available to lay persons -- in an open field. In addition, these demonstrations were not conducted

in such as way as to inflame the jury or appeal to their emotions.

In addition, the model and demonstrations the government seeks to introduce are even more relevant given that standby counsel has made public statements disputing that the device which the defendant possessed was in fact an explosive and whether it could have caused damage to the aircraft.

The Sixth Circuit, and other circuits, have approved the admission of demonstrative exhibits similar to those the government seeks to admit in this case. In *United States v. Metzger*, 778 F.2d 1195, 1198 (6th Cir. 1985), the defendant was charged with transporting explosives in interstate commerce with intent to kill or injure, destruction of a vehicle used in interstate commerce, possession of an unregistered firearm, and making a destructive device without payment of the required tax. The convictions stemmed from the defendant's use of a bomb to destroy a car containing his wife and her ten-year old son. On the day of the explosion, the defendant's wife had picked-up ten sticks of Hercules dynamite and five blasting caps. However, an analysis of the car showed that it contained residue from a certain chemical that was not used in Hercules dynamite, but was used in another type of explosive. *Id.* at 1199. At trial the government introduced a video recording of a demonstration, in which ten sticks of Hercules dynamite were detonated inside the same model of car driven by the defendant's wife. *Id.* A law enforcement officer testified that, based in part on the video recording, the explosion was the result of an intentional detonation of an improvised explosive device and not the result of any accidental detonation of the Hercules dynamite. *Id.*

On appeal, the defendant argued that the video recording of the demonstration added nothing to the government's case and any probative value of the demonstration was outweighed

by the prejudicial effect. *Id.* at 1205. The Sixth Circuit rejected these arguments. The Court of Appeals stated that “for the jury to be able to visualize the actual explosion . . . could aid in their determination of whether the explosion was accidental or not.” *Id.* at 1206. As for unfair prejudice, the Sixth Circuit disagreed with the defendant’s contention that the demonstration was intended to show “an image of what the actual vehicle must have looked like when it exploded.” *Id.* The Court of Appeals stated that the purpose of the demonstration “was not to show what the explosion of the Metzger vehicle ‘looked like’ but rather what it did *not* look like.” *Id.* (emphasis in original). The Court of Appeals affirmed the admission of the demonstration and upheld the defendant’s conviction.

In a similar fashion, the demonstrations at issue in the present case are not intended to be exact replicas of how the defendant’s bomb would have detonated on board an aircraft. Rather, the demonstrations are simply to allow the jury to have a visualization of the explosive force of PETN and how potassium permanganate and ethylene glycol react when mixed together -- both of which a lay person would not necessarily be able to envision based on their everyday life experiences. Moreover, the explosive force of the defendant’s bomb is highly relevant to whether the defendant’s bomb was likely to endanger the safety of the aircraft, or was intended to kill people or wreck the aircraft -- all of which are elements the government must prove at trial. The highly relevant nature of an explosives demonstration was critical to the Seventh Circuit’s analysis in *United States v. Smith*, 502 F.3d 680, 683 (7th Cir. 2007), in which a defendant was convicted of possessing an unregistered explosive device, constructing a destructive device without paying taxes, attempting to use an explosive device to destroy a place of business, and carrying a pipe bomb while committing a crime of violence. The defendant

caused the delivery of a Fed Ex package containing a bomb to an insurance agency owned by a man who was dating the defendant's ex-girlfriend. The bomb consisted of a steel pipe (inside of the pipe was a plastic bag containing various types of explosive powder and an igniter), a metal rod connecting end caps on the pipe, and wires linking the igniter to a mousetrap which, in turn, was connected to two batteries. *Id.* at 683-84. The bomb also contained various forms of shrapnel and a bottle of gasoline. *Id.* The bomb was discovered by its intended victim before it detonated and was eventually deactivated by law enforcement. *Id.* at 683.

At trial, the "government elicited the testimony of an explosives expert, who first described how the bomb was constructed. The expert analyzed the pieces of the dismantled pipe bomb and built a model to show what the fully constructed bomb looked like. Using the model, he then performed a brief demonstration, to which Smith's attorney objected, to illustrate how the bomb was intended to function. He also opined that the intended explosion did not occur because either there was a flaw in the electrical connection or a short in the igniter. He concluded that the bomb was designed to maim and kill bystanders and to destroy property." *Id.* at 685.

On appeal, the defendant claimed that the model and demonstration were unduly prejudicial. *Id.* at 687. The Seventh Circuit held that the "district court properly allowed the expert's demonstration . . . because it was necessary to help the government meet its burden to prove that Smith attempted to use a bomb with intent to cause harm." *Id.* The Court of Appeals stated that "[e]vidence that is probative of an element of the offense should be admitted in all but the most egregious cases." *Id.* The Court further stated that the "expert's testimony was important evidence that the bomb was designed to detonate and probative of the government's



theory of the case.” The Seventh Circuit rejected the notion that the demonstration resulted in undue prejudice because the “expert’s demonstration was not presented in an inflammatory way to incite the emotions of the jury.” *Id.* at 688. The Court noted that the expert’s demonstration certainly conflicted with the defendant’s theory that the bomb was not intended to explode, but this fact hardly made the evidence unduly prejudicial. *Id.* As the Court explained, “Smith was free to cross-examine the expert, which he did, or to call his own expert.” *Id.*

As was the case in *Smith*, the government’s demonstrative exhibits it seeks to admit in the present case are incriminating, but not in a way that is inflammatory or emotional. The government’s expert did not, for example, conduct the PETN demonstrations using aircraft seats and mannequins to replicate the men, women and children sitting in the immediate vicinity of the defendant who would have been killed or wounded from the defendant’s bomb had it functioned as intended. Rather, the expert detonated the PETN demonstrations on a simple sheet of metal that is familiar to most people. The demonstration was conducted in a grass field and each video recording of the PETN demonstrations the government intends to use at trial is only approximately one-and-a-half minutes long. Quite frankly, jurors would most likely see more graphic explosions of greater destructive impact on the nightly news.

The fact that the government’s demonstrative exhibits are incriminating does not mean that they are unfairly prejudicial. “Unfair prejudice does not mean the damage to a defendant’s case that results from the legitimate probative force of the evidence; rather it refers to evidence which tends to suggest a decision on an improper basis.” *United States v. Johnson*, 581 F.3d 320, 327 (6th Cir.2009). Evidence that is disturbing or even graphic is routinely admitted when it is relevant. *United States v. Clark*, 377 Fed.Appx. 451, 457 (6th Cir. 2010) (affirming

admission of crime-scene photos of shooting victim despite their “goriness” because photos were relevant to prove that defendant possessed gun used to shoot victim); *United States v. McClain*, 56 F.3d 65, \*3 (6th Cir. 1995) (affirming admission of photos of bank teller’s head wound caused by handle of defendant’s gun because photos were relevant to whether defendant used force to commit bank robbery and “essential” corroboration of eye-witness testimony that defendant possessed gun); *United States v. Brady*, 595 F.2d 359, 361 (6th Cir. 1979) (affirming admission of photos of bank employees and customer lying dead in a pool of their own blood because “while not pleasant to behold,” photos were “highly relevant” to whether killings were in course of bank robbery). As the Seventh Circuit has stated, “[e]vidence is not to be excluded simply because it might be graphic or disturbing, and if evidence is probative of an issue relevant to an element of the offense, it must be admitted in all but the most extreme cases.” *United States v. Kapp*, 419 F.3d 666, 677 (7th Cir. 2005). This is not one of those extreme cases. The government’s demonstrative exhibits are highly relevant to the elements of the offenses that the government must prove, corroborative of the eye-witness testimony of passengers, and address standby counsel’s publicly stated intention of challenging whether the defendant’s bomb was in fact an explosive.

CONCLUSION

For the foregoing reasons, the Government's Motion to Admit Demonstrative Evidence Regarding the Defendant's Explosive Device should be granted.

Respectfully submitted,

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Dated: September 9, 2011

**CERTIFICATE OF SERVICE**

I hereby certify that on September 9, 2011, I electronically filed the foregoing document with the Clerk of the Court using the ECF system which will send notification of such filing to Anthony Chambers. I further certify that I have caused a copy of this filing to be delivered and mailed to the defendant, Umar Farouk Abdulmutallab, Register No. 44107-039, Federal Detention Center, East Arkona Road Milan, Michigan.

s/ Lindsay Black  
Legal Assistant  
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